Title	***UVC Power Supply Control System Upgrade***			
Project Requestor	Dave Bromberek			
Date	4/17/08			
Group Leader(s)	Ali Nassiri			
Machine or Sector Manager	Nick Sereno/Louis Emery			
Category	Obsolescence/Spares			
Content ID*	APS_1271296	Rev.	1	4/17/08 3:53 PM

*This row is filled in automatically on check in to ICMS. See Note [1]

Description:

Start Year (FY)	**2009**	**Duration (Yr)**	**3**

Objectives:

Procure, assemble and program Programmable Logic Controllers (PLC's); or other control platform, capable of replacing the RF 420 Universal Voltronics Corporation (UVC) power supply control systems.

Benefit:

Each of the five RF 420 UVC power supplies utilizes a dedicated control system for machine operation, machine protection, local operator interface and a remote operator interface through EPICS. The existing RF 420 power supply control system pc boards were designed and manufactured by UVC. UVC has eliminated the manufacturing, sales and support of these PC boards. Flexibility for expansion was not considered with the UVC design and proprietary EEPROM programs were not supplied to the RF Group. With a limited supply of spare UVC pc boards on hand, the RF Group may be in critical depletion of their spare should a catastrophic failure of one control system occur. A new RF 420 power supply control system would allow the APS/RF Group the ability to support this control system utilizing the latest control system technology. Software coding would be up to date and document controlled, flexibility for expansion would be available, and the operator interface (local and remote) would be modernized.

Risks of Project: See Note [2]

N/A

Consequences of Not Doing Project: See Note [3]

If this project is not undertaken, the UVC power supply control systems will be at risk of being inoperable due to the unavailability of some components and manufacturer non-support.

Cost/Benefit Analysis: See Note [4]

Pursuit of a modern and flexible control system would ensure that the Booster and Storage Ring RF systems continue to operate and exceed current control system limitations.

Description:

An "off-the-shelf" RF 420 power supply control system must be capable of the following: Receiving a combination of 300 analog / digital inputs, controlling a combination of 100 analog / digital outputs, perform higher level math functions, provide machine protection, provide machine operation, communicate to a local human / machine interface, communicate to a remote operator via EPICS, provide data acquisition, be flexible for future expansion, manufacturer support for the future, and be easily maintained and programmed by RF personnel.
Year 1 – Procure and install one system
Year 2 – Procure and install two systems
Year 3 – Procure and install two systems

Funding Details

Cost: ($K)
Use FY08 dollars.

Year	AIP	Contingency
1	40	8
2	80	16
3	80	
4		
5		
6		
7		
8		
9		
Total	200	

Contingency may be in dollars or percent. Enter figure for total project contingency.

Effort: (FTE)
The effort portion need not be filled out in detail by March 28

Year	Mechanical Engineer	Electrical Engineer	Physicist	Software Engineer	Tech	Designer	Post Doc	Total
1		0.3			0.4			0.7
2		0.2			0.5			0.7
3		0.2			0.5			0.7
4								0
5								0
6								0
7								0
8								0
9								0

Notes:

[1] **ICMS**. Check in first revision to ICMS as a *New Check In*. Subsequent revisions should be checked in as revisions to that document i.e. C*heck Out* the previous version and C*heck In* the new version. Be sure to complete the *Document Date* field on the check in screen.

[2] **Risk Assessment.** Advise of the potential impact to the facility or operations that may result as a consequence of performing the proposed activity. Example: If the proposed project is undertaken then other systems impacted by the work
include ... (If no assessment is appropriate then enter NA.)

[3] **Consequence Assessment.** Advise of the potential consequences to the facility or to operations if the proposal is not executed. Example: If the proposed project is not undertaken then ____ may happen to the facility. (If no assessment is appropriate then enter NA.)

[4] **Cost Benefit Analysis.** Describe cost efficiencies or value of the risk mitigated by the expenditure. Example: Failure to complete this maintenance project will result in increased total costs to the APS for emergency repairs and this investment of ___ will also result in improved reliability of ____. (If no assessment is appropriate then enter NA.)